

many users, applications that shared by small number of users, applications that involve clients that are wearable by a user.

REMARKS

This amendment is submitted in response to the outstanding Office Action, dated October 2, 2001. The present application was filed on January 27, 1999, with claims 1 through 60. The present amendment amends claims 1, 3, 16, 24, 25, 30, 46, 53, and 55, but does not cancel or add claims. Consequently, claims 1 through 60 are presently pending. In the outstanding Office Action, the Examiner objected to the specification and rejected all claims under 35 USC §103(a).

Drawing Changes

Applicants have submitted drawings, with changes marked in red, for the Examiner to review. Applicants have requested to modify the drawings as follows: in FIG. 2, the acronym "NLV" in block 212 should be changed to "NLU" to conform to the text at page 8, lines 5-6; in FIG. 4A, the term "person" in one of the steps 405 should be changed to "perform" to make this step conform to the other steps 405; finally, in FIG. 5, the acronym "NLV" in block 510 should be changed to "NLU" to conform to the text at page 10, line 5. Once the Examiner approves these changes, Applicants will submit new formal drawings incorporating these changes and fixing the objections by the Draftsperson.

Objection to the Specification

In the Office Action, the Examiner objected to the specification. Specifically, the Examiner stated that the incorporated reference on page 4 should be updated. With this response, Applicants have updated this reference to include the U.S. patent number and issue date. Applicants respectfully request that the objection be withdrawn.

Amendments to the Claims

Applicants have amended independent claim 1 to more particularly point out that “the one or more CPUs execut[e] the one or more application programs when the one or more clients request the one or more application programs.” This amendment is supported, *inter alia*, by the step 405 that is performed if step 403 = YES and by step 401 in FIG. 4 of Applicants’ specification. Claims 3, 16, 24, 25, 30, 46, 53, and 55 were also amended to fix minor grammatical and other errors.

Rejection of Claims

The Examiner rejected claims 1 through 60 under 35 USC §103(a) as being anticipated by Carlsson (U.S. Patent No. 6,253,074) in combination with Ludwig (U.S. Patent No. 6,256,498). In particular, for the sole independent claim, claim 1, the Examiner asserted that Carlsson disclosed the invention substantially as claimed except for the limitation that the clients can cause CPUs to execute application programs within the visiting Mobile Service switching Center (MSC). The Examiner asserted that one of ordinary skill in the art would recognize the inefficiency of the processing between MSCs and that the processing of applications within the visiting MSC is desirable or advantageous to further the operation of the system. The Examiner further asserted that Ludwig discloses an objective teaching of visiting gateways and base station subsystems executing the applications of clients. The Examiner also asserted that it would have been obvious to combine Ludwig and Carlsson.

Broadly, aspects of the present invention provide techniques for having data and applications “follow” clients. A briefcase contains data and applications for a particular client, and the computer system containing the briefcase can execute applications or send items to the client when requested by the client. This computer system can also request applications or data for the client so that the client can cause an application to be executed on the computer system or access the data. See FIG. 4 of Applicants’ specification and associated text.

Applicants respectfully submit that neither Carlsson nor Ludwig, alone or in combination, teach or imply the limitations of “an application process that determines from one or more client signals that one or more clients are within the range of

communication and that requests and receives one or more of the application programs through the computer-interface from one or more of the second computers so that one or more clients can cause one or more of the CPUs to execute one or more of the application programs, the one or more CPUs executing the one or more application programs when the one or more clients request the one or more application programs.”

Applicants respectfully submit that neither Carlsson nor Ludwig, alone or in combination, contain the limitations, recited above, in independent claim 1, and, in particular, the limitation of “the one or more CPUs executing the one or more application programs when the one or more clients request the one or more application programs.” For a rejection under 35 USC §103(a), all claim limitations must be taught or suggested by the prior art. See MPEP §2143.03 and related cites and text.

Applicants read Carlsson as providing techniques to allow subscriptions for “cellular terminals” (i.e., cellular phones) to be associated with users instead of with particular terminals. As a user travels from one cellular area to another cellular area (called “roaming”), the home MSC transfers information about the user and his or her terminal to a visiting MSC, which then accepts the user and his or her terminal. See the paragraph spanning cols. 5 and 6 of Carlsson.

Applicants respectfully submit that there is no teaching or implication in Carlsson that a particular client will request a particular application or program. In fact, the words “application” and “program” do not appear at all in Carlsson. Carlsson itself defines “terminal” as being appropriate for calls only (“The term ‘terminal’ as used herein refers to a cellular subscriber station or mobile terminal equipment from which a call can be made or received within a cellular radio system,” col. 4, lines 58-65 of Carlsson).

In the Office Action, the Examiner asserted the following concerning Carlsson: “Even without an objective teaching, one of ordinary skill in the mobile communication art at the time of the invention would recognize the inefficiency of the processing between MSCs (as appears in the case in Carlsson) and that the processing of applications (with higher computations) within the visiting MSC is desirable or advantageous to further the operation of the system.” Applicants respectfully submit that one skilled in the art of mobile communications at the time of the present invention

would not have determined from Carlsson that it would be advantageous to transfer and execute applications based on clients.

Applicants respectfully submit the following: (1) It is inefficient to transfer applications through the cellular network of Carlsson because there is a limited amount of bandwidth available for cellular conversations, and transfer of applications reduces the available bandwidth for cellular conversations; (2) As of the time of present invention, MSCs simply were not designed to execute applications based on clients; and (3) Instead, MSCs, even today, are primarily used to connect cellular terminals with other cellular terminals, other land-based phones, or the internet, and MSCs are primarily used to shuffle data between cellular terminals and the MSC. Consequently, one skilled in the art would not realize, from Carlsson, that it might be beneficial for an MSC to execute a client-specific application, as the MSCs are simply not designed for this purpose.

Applicants also respectfully submit that there is no teaching or implication in Ludwig that a particular client will request a particular application or program and that application or program will be executed, as claimed in independent claim 1. Applicants read Ludwig as providing a transfer of location specific data to a "mobile device," through a "global data bearer services network," to allow location dependent World Wide Web (WWW) services at the mobile device. See Abstract of Ludwig. The Examiner points to col. 6, lines 7-49, col. 7, lines 16-27, col. 8, lines 1-51, and col. 9, line 64 to col. 10, line 38 for the assertion that Ludwig discloses an objective teaching of the visiting gateways and base station subsystems executing applications of the client.

Basically, to anticipate independent claim 1, a reference will have to have a "client" that requests an application, a second computer that contains the application, and a third computer that receives the application from the second computer and that executes the application for the client. Similarly, for a combination of references to render obvious independent claim 1, the combination needs to have a client that requests an application, a second computer that contains the application, and a third computer that receives the application from the second computer and that executes the application for the client.

Applicants have examined the cited sections of Ludwig and cannot find any teaching or implication in Ludwig of the limitations in Applicants' amended claim 1.

Applicants read col. 6, lines 7-49, as providing Internet Protocol (IP) routing for a General Packet Radio Service (GPRS). Applicants read col. 7, lines 16-27, as providing a mobile station (i.e., cellular phone) with a connection to a mobile device (i.e., laptop computer) and a connection to a number of base stations. Basically, the mobile station acts as an intermediary, receiving requests from the mobile device for "location specific data" and transferring the data to the mobile device. However, even if a mobile device is equated with the "client" of claim 1, a mobile station is equated with the "computer system" of claim 1, and a base station subsystem is equated with a "second computer" of claim 1, there is no indication in Ludwig of the limitation in claim 1 of "the one or more CPUs [of the computer system] executing the one or more application programs when the one or more clients request the one or more application programs." Ludwig does describe how devices in the mobile station select location specific data (see col. 7, lines 28-47 of Ludwig), but there is no indication in Ludwig that the mobile station (equated with the computer system of claim 1) receives an application from a base station subsystem (equated with a second computer of claim 1) and executes the application upon request from the mobile station (equated with a client of claim 1), as recited in claim 1.

Applicants read col. 8, lines 1-51 of Ludwig as providing HyperText Transmission Protocol (HTTP) transfers to the mobile device. The mobile device contains a World Wide Web (WWW) application that is used to send and receive data. This cited section also states that a WWW application could also be installed onto the mobile station. There is, however, no indication in this cited section of Ludwig that the mobile station receives an application from a base station subsystem and executes the application upon request from the mobile device. Finally, the Applicants read col. 9, line 64 to col. 10, line 38 of Ludwig as describing how location dependent services can be routed from a subscriber to a WWW services. Again, Applicants respectfully submit that there is no indication in this cited section of Ludwig that the mobile station receives an application from a base station subsystem and executes the application upon request from the mobile device.

The Examiner has asserted that Ludwig discloses the visiting gateways and base station subsystems executing applications of the client. However, as Applicants

respectfully submit above, there is no teaching in Ludwig of this assertion. For example, Ludwig states, "To achieve a link between different service areas there is provided a gateway mobile service switching centre GMSC that serves to determine specific locations of a mobile station MS, to route calls towards a mobile station MS and to connect to other networks." See col. 1, lines 38-42 of Ludwig. There is no mention of having the gateways execute programs for a client. In fact, wherever the term "gateway" is used in Ludwig, the gateway is associated with routing and no mention is made of receiving an executing applications for a client. Similarly, with a base station, Ludwig states, "Further, the base station sub-system BSS corresponds to physical equipment providing radio coverage to the above-mentioned cells which are approximately hexagonal geographical regions. Each base station sub-system BSS contains equipment required to communicate with the mobile station MS." See col. 2, lines 5-10 of Ludwig. Again, no mention of having a base station subsystem execute applications requested by clients is made.

Consequently, because neither Carlsson nor Ludwig no indication in this cited section of Ludwig that a computer system receives an application from a second computer and executes the application upon request from client, independent and amended claim 1 is not anticipated by these references. Moreover, if neither reference contains these limitations, then both references combined cannot contain these limitations. Therefore, the combination of Carlsson and Ludwig also does not contain the cited limitations and cannot, therefore, render obvious independent and amended claim 1. Based on this reasoning, claim 1 is patentable over Carlsson and Ludwig, alone or in combination. Because independent claim 1 is patentable, dependent claims 2 through 60 are also patentable, as the dependent claims include all the limitation of independent claim 1.

Conclusion

Applicants respectfully submit that the claims of record are patentable over the cited art. If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to

contact the undersigned at the telephone number indicated below. The Examiner's attention to this matter is appreciated.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

The paragraph beginning on line 21, page 4 has been modified as follows:

For different applications, different methods for storing, in clients and servers, different functions and modules can be suggested. One standard on how functions and modules in Automatic [speech] Speech Recognition (ASR) can be distributed between a client and server can be found in the U.S. patent application [YO997-015 (A.Zingher,) 6,092,039, by A. Zingher, entitled “Symbiotic Automatic Speech Recognition and Vocoder,” [Vocoder), serial number 960,535, filed on October 31, 1999,] issued on July 18, 2000, which is herein incorporated by reference in its entirety. This referenced application describes the configuration of client/server in an IBM Voice Type 3 ASR system. This description can be used for configuring a client embedded system and a briefcase in a server.

IN THE CLAIMS

1. (Amended) A computer system comprising:

one or more memories and one or more central processing units (CPUs);

one or more communication interfaces, each of the communication interfaces capable of receiving a client signal from one or more clients indicating that a client is within a range of communication of the computer;

one or more computer interfaces capable of communicating with one or more second computers, the second computers each having a computer location and one of more application programs;

an application process that determines from one or more client signals that one or more clients are within the range of communication and that requests and receives one or more of the application programs through the computer interface from one or more of the second computers [at the computer location] so that one or more clients can cause one or more of the CPUs to execute one or more of the application programs, the one or more CPUs executing the one or more application programs when the one or more clients request the one or more application programs.

2. (Unchanged) A computer system, as in claim 1, where application programs are grouped into packages and one or more clients are linked to packages in such a way that application programs in each package support only clients that are linked to this package.

3. (Amended) A computer system, as in claim 2, where all clients that are wearable by one person are linked to one package of application programs.

4. (Unchanged) A computer system, as in claim 1, where the communication interface receives a second client signal when one or more clients pass outside of the range of communication.

5. (Amended) A computer system, as in claim 4, where the communication interface receives a second client signal when one or more clients that are linked to a package of programs pass outside of the range of the communication.

6. (Unchanged) A computer system, as in claim 5, where all clients linked to one package of programs are wearable by one person.

7. (Unchanged) A computer system, as in claim 1, where one of the computer interfaces receives a second client signal when one or more clients pass outside of the range of communication.

8. (Unchanged) A computer system, as in claim 1, where the computer determines that one or more clients pass outside of the range of communication.
9. (Unchanged) A computer system, as in claim 8, where one or more clients that pass outside of the range of communication are linked to the same package.
10. (Unchanged) A computer system, as in claim 8, where the computer discards one or more of the applications after one or more client pass outside of the range.
11. (Unchanged) A computer system, as in claim 10, where all applications in one package are discarded after all clients that are linked to this package pass outside of the range.
12. (Unchanged) A computer system, as in claim 8, where the computer determines whether one or more clients are outside of range by measuring distance from this computer to these clients.
13. (Unchanged) A computer system, as in claim 8, where the computer discards one or more of the applications after one or more clients pass outside of the range and after the discarded applications have been sent to one or more of the second computers.
14. (Unchanged) A computer system, as in claim 13, where applications that are discarded belong to one package.
15. (Unchanged) A computer system, as in claim 14, where all clients that are linked to the package pass outside of the range.
16. (Amended) A computer system, as in claim 1, where the computer discards one or more of the applications after the discarded applications have been sent to one or more of the second computers.

17. (Unchanged) A computer system, as in claim 16, where all discarded applications belong to the same package.
18. (Unchanged) A computer system, as in claim 16, where the second computer is less busy than the computer.
19. (Unchanged) A computer system, as in claim 1, where the communication interface includes any one or more of the following: a radio link, an infrared link.
20. (Unchanged) A computer system, as in claim 1, where the computer interface includes any one or more of the following: a network, a wide area network, a local area network, an internet, an intranet, a telephone network, a radio frequency network.
21. (Unchanged) A computer system, as in claim 1, where the client includes any one or more of the following: a moving computer, a pen input device, a personal data assistant, a watch, a palm top, a telephone, a key, a speech recognition system.
22. (Unchanged) A computer system, as in claim 1, that is incorporated in any one or more of the following: a printer, a television, a microwave, a refrigerator, a car, a public structure, a lamppost, a mail box.
23. (Unchanged) A computer system, as in claim 1, where one or more of the second computers is a main computer that has copies of all of the applications as backup.
24. (Amended) A computer system, as in claim 1, where one or more of the second computers is a local computer that has copies of all applications for all clients that are in a communication range of another second [computers that are] computer that is in a communication range with the local computer.
25. (Amended) A computer system, as in claim 1, where one or more clients send a request for some item or application in a package to one or more second computers and if

such application or an item is not available one or more second computers send a request for this application or item to [the] a main computer and the main computer performs the requested application for these one or more clients or [send them] sends the requested item to the one or more clients.

26. (Unchanged) A computer system, as in claim 25, where the requested item and application are sent to packages in one or more second computers that are linked to one or more clients that requested this item or application.

27. (Unchanged) A computer system, as in claim 24, where one or more clients send a request for some item/application in a package and an address of the local computer to one or more second computers.

28. (Unchanged) A computer system, as in claim 27, where the item/application is sent to the client if it is found on one or more second computers.

29. (Unchanged) A computer system, as in claim 28, where one or more second computers check whether they are in a communications range from the local computer at the address that was sent by the client.

30. (Amended) A computer system, as in claim 29, where the local computer checks whether it has the requested item/application if it is in the range of communication from one or more second computers and where the local computer sends the requested item/application [of it found it] if the local computer found the item/application.

31. (Unchanged) A computer system, as in claim 29, where the request/application and the address of the local computer is sent to a main server if it was found that the local server is not in the communication range of one or more second computers.

32. (Unchanged) A computer system, as in claim 31, where the item/application from the main server is sent to the client that requested this item/application if this item/application was found.

33. (Unchanged) A computer system, as in claim 31, where the request for the item/application was sent to the local server at the address that was received by the main server if this item/application was not found in the main server.

34. (Unchanged) A computer system, as in claim 33, where the local server sends the item/application to the main server and the main server sends this item/application to the client.

35. (Unchanged) A computer system, as in claim 1, where one or more of the applications is an application portion.

36. (Unchanged) A computer system, as in claim 35, where the application portion is a front end of a speech recognition system.

37. (Unchanged) A computer system, as in claim 36, where the front end of the speech recognition system includes a microphone and signal processor.

38. (Unchanged) A computer system, as in claim 35, where the application portion is a front end of a word processing system.

39. (Unchanged) A computer system, as in claim 38, where the front end of the word processing system includes a keyboard.

40. (Unchanged) A computer system, as in claim 35, where the application portion includes any one or more of the following: an automatic speech recognition front end, an automatic handwriting recognition system front end, a user verification system front end, a user identification system front end, a natural language understanding system front end.

41. (Unchanged) A computer system, as in claim 1, where part of the application remains as a second portion on one or more of the second computers.
42. (Unchanged) A computer system, as in claim 41, where the second portion includes any one or more of the following: an automatic speech recognition back end, an automatic handwriting recognition user verification system back end, a user identification system back end, a natural language understanding system back end, a word processing system back end, and a database.
43. (Unchanged) A computer system, as in claim 35, where the application portions are classified in accordance with how processes that are needed to run these applications can be handled.
44. (Unchanged) A computer system, as in claim 43, where processes can be handled to be run in parallel, can be shared by different applications or can be substituted.
45. (Unchanged) A computer system, as in claim 44, where application portions are classified as parallel, shared or substituted.
46. (Amended) A computer system, as in claim 45, where the application portions are scheduled to be run in [CPU] CPUs and memories in accordance with their classification.
47. (Unchanged) A computer system, as in claim 41, where one or more of the second portions run in parallel with one or more of another second portions.
48. (Unchanged) A computer system, as in claim 41, where one or more of the second portions is shared by different clients.
49. (Unchanged) A computer, as in claim 41, where one or more of the second portions belong to the same package.

50. (Unchanged) A computer, as in claim 41, where one or more of the second portions belong to different packages.

51. (Unchanged) A computer system, as in claim 41, where one or more of the second portions shares the same data stored by one or more of another second portions.

52. (Unchanged) A computer system, as in claim 51, where one or more of the second portions are signal processing that perform on inputs from different mikes located on different clients.

53. (Amended) A computer system, as in claim 41, where one or more of the second portions are the following: [ASR and AHR] Automatic Speech Recognition (ASR) and Automatic Handwriting Recognition (AHR).

54. (Unchanged) A computer system, as in claim 1, where the applications are received in a priority order.

55. (Amended) A computer system, as in claim 54, where priority order [include] includes the following: applications that are currently used by a user, applications that are shared by many users, applications that shared by small number of users, applications that involve clients that are wearable by a user.

56. (Unchanged) A computer system, as in claim 54, where priority order is defined by history data on how often some applications were used.

57. (Unchanged) A computer system, as in claim 1, where the applications are received from a backup computer if communication with second computer fails.

58. (Unchanged) A computer system, as in claim 1, where the client signal is received from one or more of the following location devices: a pressure sensor, an ultrasonic detector, a radio frequency tag, a motion detector.

59. (Unchanged) A computer system, as in claim 1, where the applications include any one or more of the following: a web browser, a financial program, a word processing program, a search engine, a database used by the application, a general database.

60. (Unchanged) A computer system, as in claim 1, where one or more of the applications are discarded if that are not executed by one or more of the CPUs within a time period.